

Applicants have submitted on a separate sheet a marked-up version of amended claim 17 entitled "Version with Markings to Show Changes Made."

### REMARKS

Claims 18, 19, 20 and 21 are pending. Claim 17 was amended to recite the limitations of the ethylene alpha olefin copolymers formed by a polymerization reaction in the presence of a single site catalyst. In claim 17 the text "a polymer or copolymer formed by a polymerization reaction with a single site catalyst" was deleted and replaced with the text "an ethylene alpha-olefin copolymer formed by a polymerization reaction in the presence of a single site catalyst, said ethylene alpha-olefin copolymer having a molecular weight distribution of less than 2.5 and a  $I_{10}/I_2$  ratio of about 7 to 12." Support for the amendment to claim 17 is found on page 14, lines 2 to 15 of the specification.

Applicants' invention as amended covers a film structure comprising the following layers:

- (a) a first barrier layer, having first and second opposing surfaces;
- (b) second and third adhesive layers disposed on opposing surfaces of said first layer;
- (c) a fourth layer comprising ethylene vinyl acetate copolymer and disposed adjacent to said third layer; and
- (d) a fifth layer comprising ethylene alpha-olefin copolymer formed by a polymerization reaction in the presence of a single site catalyst, said ethylene alpha-olefin copolymer having a molecular weight distribution of less than 2.5 and a  $I_{10}/I_2$  ratio of about 7 to 12 and disposed adjacent to said fourth layer wherein said film is irradiated.

### Rejections under 35 USC §103

The Examiner rejected claims 18, 19, 20 and 21 under 35 USC §103(a) as being unpatentable over Newsome, U.S. Patent No. 4,457,960 in view of Lai et al., U.S. Patent No. 5,272,236 and Wilhoit, U.S. Patent No. 5,283,128.

In response to the above cited rejections applicants have amended claims 17 to recite the limitations of the ethylene alpha olefin copolymers formed by a polymerization reaction in the presence of a single site catalyst, wherein the ethylene alpha olefin copolymers have a molecular weight distribution of less than 2.5 and have a melt flow ratio of about 7 to about 12. The above described ethylene alpha olefin copolymers have improved and surprising properties over the

ethylene alpha olefin copolymers of Newsome which are formed in the presence of a conventional catalyst. These improved properties are described on page 5, lines 21 to 26 to page 6, lines 1 to 2 and the examples of pages 17 to 20 of the instant specification.

Newsome discloses a film structure wherein at least one of said layer comprises a blended LLDPE and wherein said LLDPE is prepared using a non-metallocene catalyst.

From column 2, lines 40 to column 3, line 22, Newsome discloses various embodiments of the invention. In all the embodiments taught, at least one layer of the film structure comprises a blend of non-metallocene LLDPE and EVA. Therefore in Newsome, a blended layer of non-metallocene LLDPE and EVA is required.

By contrast, Applicants' invention does not require that at least one layer comprise a blend of LLDPE and EVA. Also applicants' film structure is irradiated. Newsome does not teach or suggest irradiation of his film structure.

Therefore given the following distinctions between Newsome and Applicants' invention, Newsome teaches non-metallocene LLDPE; applicants teach metallocene ethylene alpha-olefin copolymer; Newsome requires that at least one layer of the film structure comprise a blend of non-metallocene LLDPE and EVA; applicants' invention does not require a blend; Newsome does not disclose an irradiated film structure; applicants film structure is irradiated; it is not seen how a reading of Newsome can make obvious Applicants' invention.

Lai discloses linear olefin polymers having several uses, *i.e.*, fibers, films and molded parts without any teaching or suggestion as to how its linear olefin polymers could be specifically utilized in these various areas. Lai also does not disclose any advantages or disadvantages associated with the use of its linear olefin polymers in the general areas disclosed. Therefore, a reader of Lai would have no guidance on how to utilize the linear olefin polymers in any of the areas disclosed, or whether or not the use in a particular area would truly be advantageous.

While Lai discloses linear olefin polymers and some of the properties associated with these polymers, Lai does not disclose any of the problems or benefits of the use of these polymers in a multilayer film. In fact, Lai does not teach or suggest the use of these polymers in a multilayer film let alone a multilayer film having a barrier layer. Also, Lai does not teach or suggest any cross-linking properties of the linear olefin polymers or how these polymers will respond to irradiation.

Applicants submit that the present invention is not made obvious by Lai. In order to arrive at applicants' invention, applicants have utilized several different applications of the linear olefin polymer. These applications are: the use in a multilayer film; use in a multilayer film having a barrier film; and use in a multilayer layer film having a barrier layer which is irradiated. None of these applications are taught or suggested in Lai.

Wilhoit discloses a heat-shrinkable film comprising a three component blend wherein said blend comprises a polyethylene member selected from the group consisting of VLDPE and LLDPE or a mixture thereof, ethylene alpha-olefin plastomer copolymer of density below 0.90 g/cm<sup>3</sup>, and ethylene vinyl acetate copolymer. Therefore, in Wilhoit, whether the film is a monolayer or a multilayer, at least one layer must comprise the above-described blend.

Applicants' invention is to a five-layer film structure comprising a first-barrier layer, a second and third adhesive layer disposed on opposing surfaces of said first layer, a fourth layer of ethylene vinyl acetate copolymer, and a fifth layer of an ethylene alpha-olefin copolymer formed by a single site catalyst process. Applicants' film structure is totally distinct from the teaching of Wilhoit because no such blend is present in Applicants' invention. Wilhoit's teaching of irradiating a film comprising the above-described blend does not make obvious irradiation of Applicant's film structure because Applicants film structure is distinct from that taught by Wilhoit. One can not predict that the irradiation of a given film structure will be successful based on the irradiation of a totally different structure.

The Examiner rejected claims 17, 18, 20 and 21 under 35 USC §103(a) as being unpatentable over Newsome, in view of *Schut*, "Enter a New Generation of Polyolefins", Nov. 1991, *Plastics Technology* or *Van Der Sanden* "A New Family of Linear Ethylene Polymers with Enhanced Sealing Performance," Feb. 1992, and further in view of Wilhoit.

The Newsome and Wilhoit references have been discussed earlier in this response.

The Van der Sanden reference discloses linear ethylene polymer having lower seal initiation temperatures, toughness and strength. There is no disclosure in Van der Sanden of the flow rate ratio of the single site catalyst polymers, nor of any favorable results that arise from the use of ethylene alpha-olefin copolymers formed from a polymerization reaction in the presence of a single site catalyst having range of molecular weight distribution and flow rate ratio contained in the amended claims. Additionally, while Van der Sanden teaches the favorable

property of narrow molecular weight distribution, it does not teach the particular range recited in the amended claims.

The Schut reference discloses polyethylenes made using a homogeneous metallocene catalyst having certain improved properties. The reference further discloses that these polyethylenes may have many applications depending on the process. The Schut reference does not teach or suggest applicant's multilayer, irradiated film having the particular physical characteristics which are described in the amended claims.

Applicants respectfully submit that the claims, as amended, distinctly define the present invention from any of the art of record taken singly or in combination for the reasons that were presented above.

In view of the foregoing remarks and amendments, applicants respectfully submit that all of the claims in the application are in allowable form and that the application is now in condition for allowance.

Date: September 10, 2001

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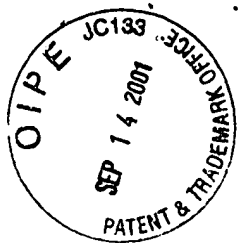
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**TC 1700**

Respectfully submitted,

By: Joy Ann G. Serauskas  
Joy Ann G. Serauskas  
Registration No. 27,952  
McDERMOTT, WILL & EMERY  
227 West Monroe Street  
Chicago, IL 60606-5096  
312-372-2000

CHI99 3745585-1.024180.0044



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## VERSION WITH MARKINGS TO SHOW CHANGES

### In the Claims

Please amend claim 17 as follows.

17. (Amended) A multilayer polymeric film, comprising:

- (a) a first barrier layer, having first and second opposing surfaces;
  - (b) second and third adhesive layers disposed on opposing surfaces of said first layer;
  - (c) a fourth layer comprising ethylene vinyl acetate copolymer and disposed adjacent to said third layer; and
  - (d) a fifth layer comprising ethylene alpha-olefin copolymer formed by a polymerization reaction in the presence of a single site catalyst, said ethylene alpha-olefin copolymer having a molecular weight distribution of less than 2.5 and a  $I_{10}/I_2$  ratio of about 7 to 12; [a polymer or copolymer formed by the polymerization reaction with a single site catalyst] and disposed adjacent to said fourth layer;
- wherein said film is irradiated.